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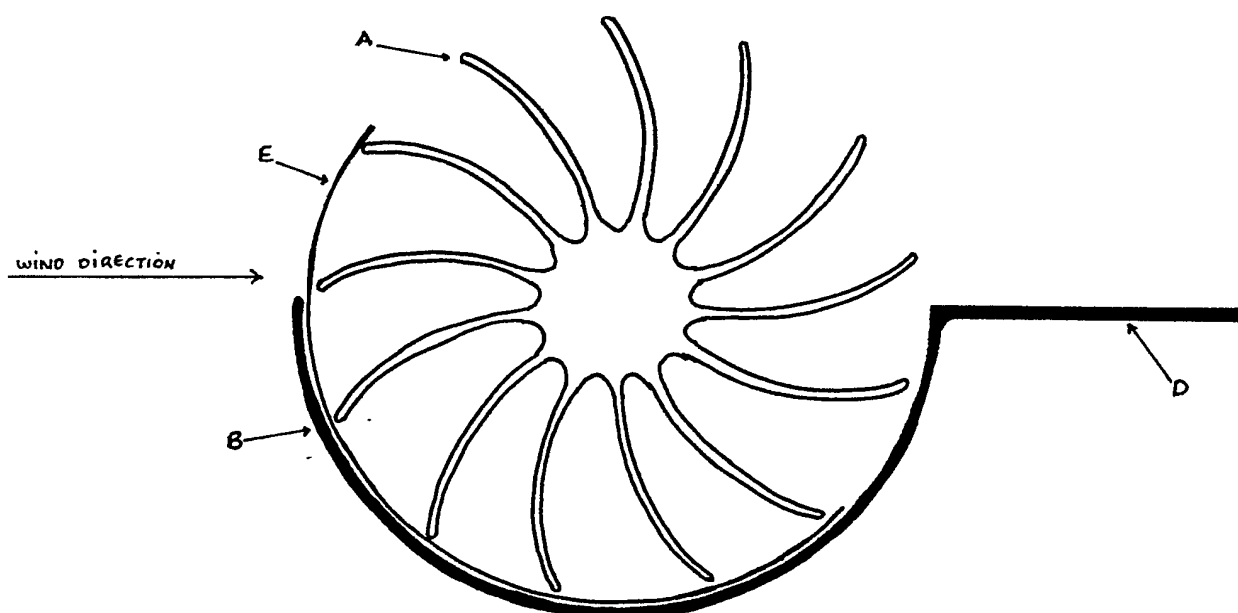Anthony Close, 21 Longmeadow Rise, Keelby, Grimsby,
South Humberside DN37 8EY

(56) Documents cited
GB A 2041457
GB 0281360

(58) Field of search
F1T
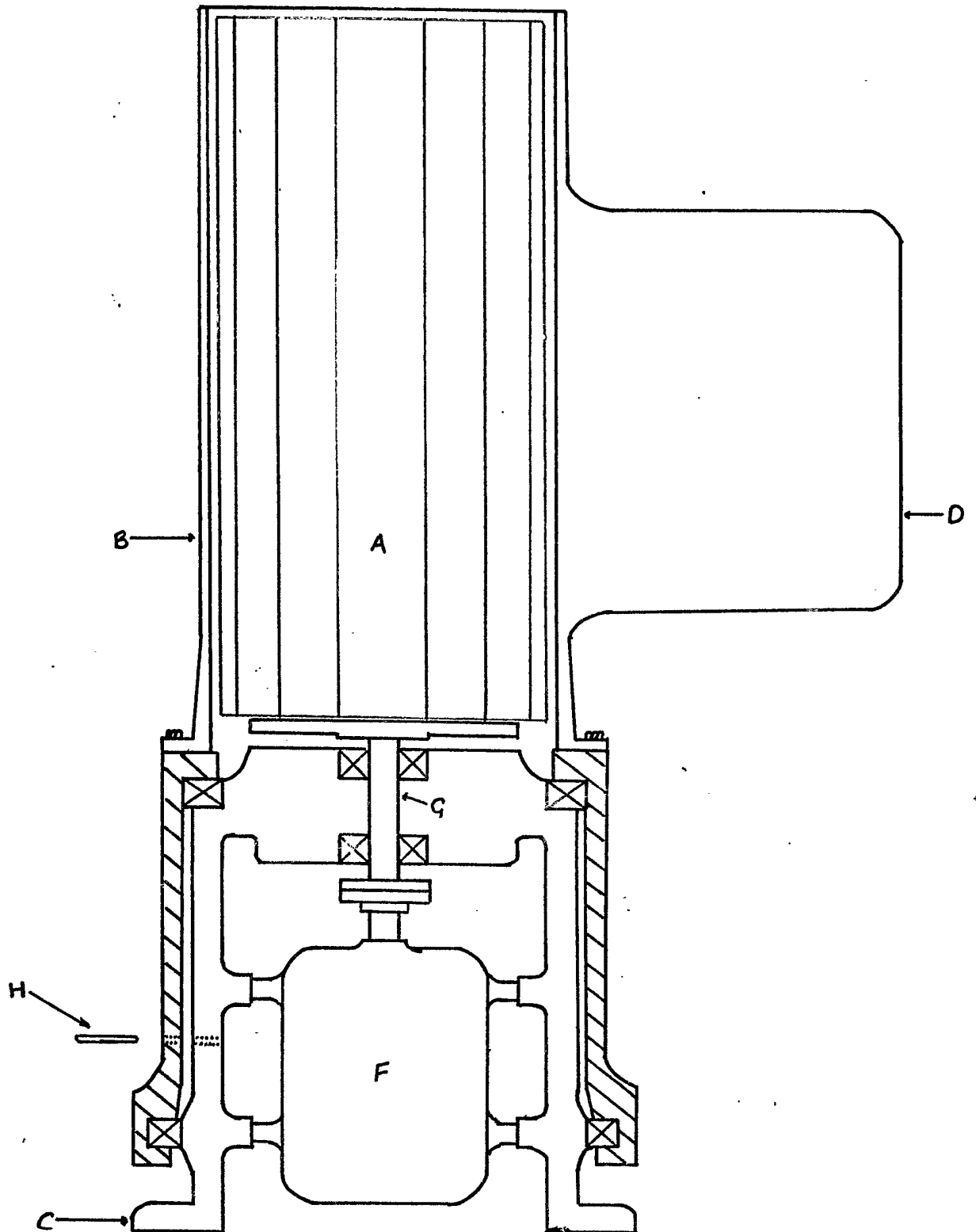Selected US specifications from IPC sub-class F03D

(54) Vertically mounted wind generator

(57) The top section of the deflector B is cut away to 180° thus exposing the rotor to the wind. Changes in the wind direction reposition the deflector by means of a fin "D", the deflector pivoting around the base by means of needle roller bearings. The machine is stopped and started by a sliding skirt which is incorporated within the deflector. This skirt can be operated manually or by a centrifugal trip device in the event of the machine overspeeding.

A flange mounted base "C" incorporates the electrical generator F, and the bearing housing for the drive shaft, which is free to rotate in two sets of bearings. Attached to the drive shaft is the multi bladed rotor "A". A locking pin H secures the machine via a hole in the deflector and a location hole in the base of the machine.
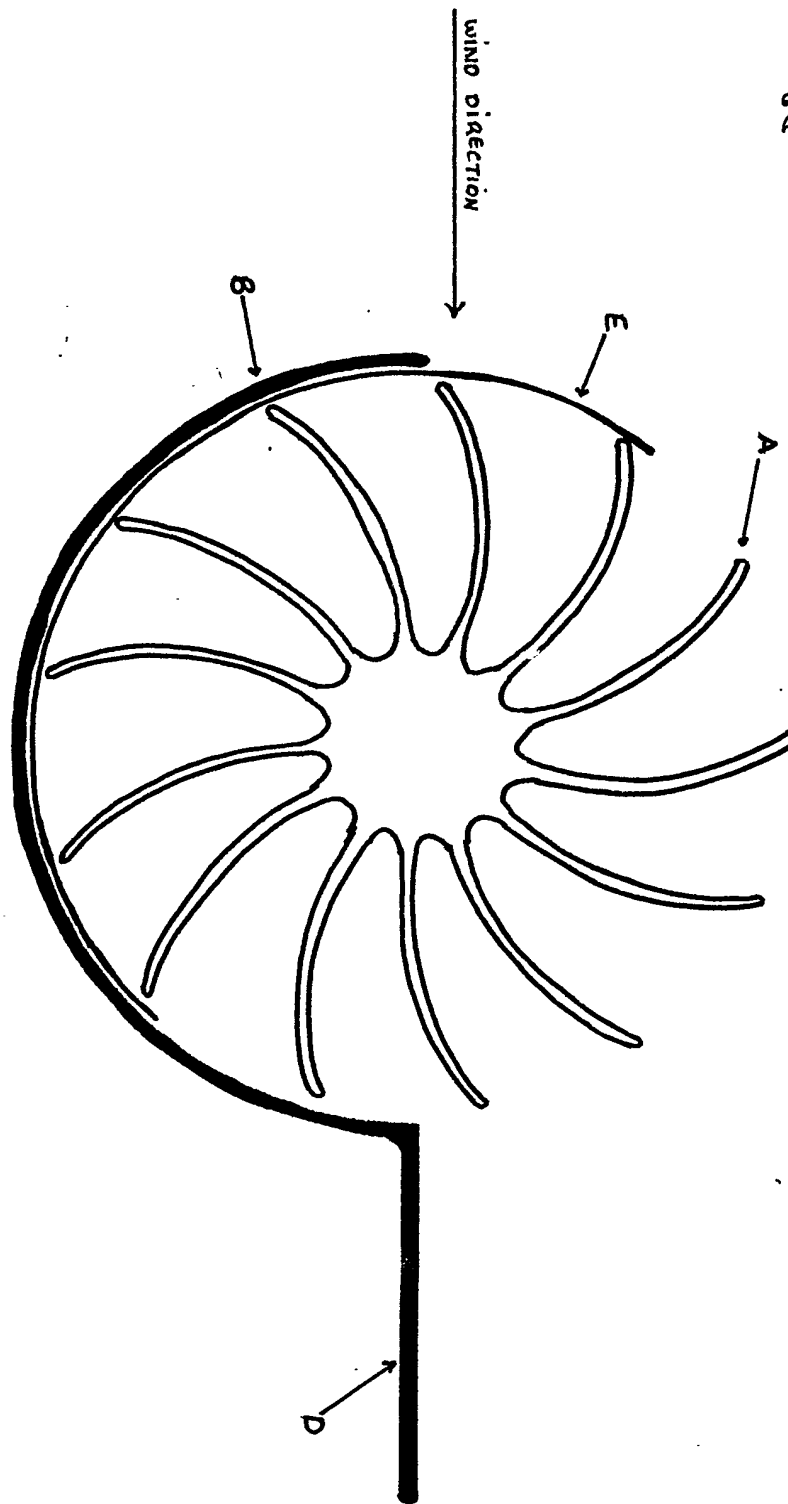

WIND DIRECTION

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.

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A

B

D

G

H

C

F

⊠   BEARING

2168763

WIND DIRECTION

B

E

A

D

SPECIFICATION
Vertically Mounted Wind Generator

This invention relates to a wind driven generator.
The wind driven generators that are commercially
5 available at the present time are off a propeller
driven type. Because of this, a large area of floor
space is required, not only for the rotation of the
propeller blades, but to facilitate any change in wind
direction.
10   According to the present invention, the design is
to be more compacked and streamline when in
operation and during it's shut down.
A specific embodiment of the invention will now
be described by way of example with reference to
15 the accompanying drawing's in which:—
Figure 1 shows a cross section of the base of the
machine C and a side elevation of the rotor A and
wind deflector B and positioning fin D.
Figure 2 shows a plan view of the rotor. Blade's A
20 and the sliding skert E also the area of rotor covered
by the wind deflector.
Referring to the drawing, the machinary consists
of a vertically mounted multi bladed rotor A driving
a generator F via a drive shaft G off which can rotate
25 within two sets of bearings. The wind deflector B
which pivots around the base of the machine C via
two sets of needle roller bearings is equipped with a
fin D so that it is always positioned by the wind
direction as shown in Figure 2.
30   The purpose of this deflector is to shield the on
coming rotor blades from the force of the wind,
when in it's running position 180°, therefore the only
blades exposed to the wind are rotating in the same
direction as the wind. As the wind direction changes
35 so the fin D repositions the deflector.
If the machine is to be shut down the deflector is
complete to a cylindrical shape 360° by a sliding
skert E which slides around the inside of the
deflector, both of which are covered in at the top to

40 stop the ingress of any foreign bodies. This skert
shields the rotor from the force of the wind, and in
this position a pin H locks the deflector to the base of
the machine.
A Rotor
45   B Deflector
C Base
D Fin
E Sliding Skert
F Generator
50   G Drive Shaft
H Locking Pin

CLAIMS
1. A wind driven generator comprising of a
vertically mounted, multi bladed rotor. Around
55 which a deflector covering 180° of the blading,
pivots around the base of the machine.
2. A wind driven generator as claim 1 wherein the
deflector is provided with a fin to position the
deflector according to the wind direction.
60   3. A wind driven generator as claim 1 and 2
wherein the deflector is provided with a sliding skirt
which in it's running position is incorporated within
the deflector. If the machine is shut down, the above
mentioned skirt slides around the rotor blades, thus
65 shielding the blades from the force of the wind.
4. A wind driven generator as claim 1 to 3 wherein
the sliding skirt can be operated manually, or in the
event of the machine overspeeding can be operated
by a centrifugal trip device.
70   5. A wind driven generator as claim 1 to 4 wherein
a looking pin will secure the deflector to the base off
the machine, thus preventing any movement,
should the wind direction change while in it's shut
down position.
75   6. A wind driven generator as claim 1 to 5 wherein
the above mentioned deflector and skirt are covered
in at the top, to prevent the ingress of foreign bodies
while the machine is shut down.

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**DOCUMENT-
IDENTIFIER:** GB 2168763 A

TITLE: Vertically mounted wind
generator

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INVENTOR-INFORMATION:

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US-CL-CURRENT: 415/2.1 , 416/4

ABSTRACT:

The top section of the deflector B is cut away to 180 DEG thus exposing the rotor to the wind. Changes in the wind direction reposition the defector by means of a fin "D", the deflector pivoting around the base by means of needle roller bearings. The machine is stopped and started by a sliding skirt which is incorporated within the deflector. This skirt can be operated manually or by a centrifugal trip device in the event of the machine overspeeding.

A flange mounted base "C" incorporates the electrical generator F, and the bearing housing for the drive shaft, which is free to rotate in two sets of bearings. Attached to the drive shaft is the multi bladed rotor "A". A locking pin H secures the machine via a hole in the deflector and a location hole in the base of the machine. ☐